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Kazuya Matsumoto

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SCULLY SCOTT MURPHY & PRESSER, PC
400 GARDEN CITY PLAZA
SUITE 300
GARDEN CITY, NY 11530

EXAMINER

SMITH, PHILIP ROBERT

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

- [01] A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/23/08 has been entered.

Claim Rejections - 35 USC § 103

- [02] The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
- [03] Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda (5,681,260) in view of Biglieri (6,958,577) and Nevo (6,594,517).
- [04] Ueda discloses a capsule endoscope system comprising:
- [04a] a capsule endoscope ("capsule type endoscope 150," 18/8), of which movement is controlled by a magnetic field externally applied (via "guided part 159," 18/50);
 - [04b] magnetic-field generating means ("magnetic force generating part 31," 18/45) for generating a magnetic field focused on one point to control the movement of the capsule endoscope traveling in a body cavity of a subject lying down on an examination table ("bed t0," 8/42-50); and
 - [04c] moving means for moving ("magnetic force generating apparatus 11," 8/51-65) the magnetic-field generating means relative to the examination table.

[04d] a magnetic-field generating member ("guided part 159," 180/50) is arranged in at least one portion of the capsule endoscope.

[04e] position detecting means ("hall sensor unit 138" 18/41) for detecting position of the capsule endoscope; wherein the position detecting means detects the position of the capsule endoscope, and the moving means automatically controls the movement of the magnetic-field generating means on the basis of information on the position of the capsule endoscope:

The controlling apparatus 12 comprises a motor driving circuit 133 driving said motors 37 and 38, a position detecting part 134 inputting the output of said hall sensor 131 ... (15/57-67);

The outputs of the hall sensor 131 in the respective positions will be determined. The position in which the output of this hall sensor is maximum will be determined as the position of tip forming part 19... After the position of the tip forming part 19 is thus detected, the insertable part 8 will be magnetically guided and will be further inserted into the object (16/18-44).

[05] Ueda does not disclose:

[05a] moving means for moving the examination table relative to the magnetic-field generating means;

[05b] an examination table drive control unit for controlling the movement of the examination table.

[06] Biglieri discloses the following in 5/23-30:

According to a further embodiment of FIG. 6, a magnetic structure may be provided which is displaced relative to the patient table, hence to the body under examination or the part thereof to a predetermined extent and in predetermined directions.

In this case, the magnetic structure 1 or the patient table 2, or both may be displaced relative to each other.

[07] Biglieri demonstrates the equivalence of the claimed invention with the invention disclosed by Ueda.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the examination table disclosed by Ueda could be controlled to move relative to the magnetic-field generating means disclosed by Ueda, as opposed to the other way around. A skilled artisan may turn to this obvious and equivalent alternative if, for example, the magnets (due to their weight) are more difficult to move than the patient; or if the wires associated with an electromagnetic field-generating device are short or cumbersome.

[08] Ueda in view of Biglieri does not disclose that the magnetic field generating member ("guided part 159," as noted above) includes a plurality of magnetic coils arranged in the directions of three axes.

[09] Nevo discloses a plurality of magnetic coils arranged in the directions of three axes, which perpendicularly intersect one another ("coils 22, 24, 26, as more particularly illustrated in FIG. 1a, have axes of known orientation with respect to each other, which axes have components in the three orthogonal planes," 4/66-5/2).

[10] At the time of the invention, it would have been obvious to a person of ordinary skill in the art to substitute the "guided part 159" disclosed by Ueda with the orthogonal coils disclosed by Nevo. A skilled artisan would be motivated to do so in order to "enable more precise control of the position, direction and operation of the device" (4/5-7).

[11] Nevo discloses that a current may be selectively supplied to at least one of the plurality of magnetic coils in a time series manner to control the movement of the capsule endoscope by the interaction thereof with the magnetic-field generating means: "the electrical currents through coils 22, 24, 26 may be controlled by the processing and control unit 10 to cause the torque generating module 20 to generate a resultant magnetic dipole interacting with the homogenous magnetic field produced by

the MRI magnet 42 to produce a torque of the desired direction and magnitude, which is applied to the intra-body device 30, to steer it or to otherwise activate it" (5/4-11).

Additional Claim Rejections - 35 USC § 103

- [12] Claims 8, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda (5,681,260) in view of Biglieri (6,958,577).
- [13] Ueda discloses a capsule endoscope system comprising:
- [13a] a capsule endoscope ("capsule type endoscope 150," 18/8), of which movement is controlled by a magnetic field externally applied (via "guided part 159," 18/50); magnetic-field generating means ("magnetic force generating part 31," 18/45) for generating a magnetic field focused on one point to control the movement of the capsule endoscope traveling in a body cavity of a subject lying down on an examination table ("bed 10," 8/42-50); and
 - [13b] moving means for moving ("magnetic force generating apparatus 11," 8/51-65) the magnetic-field generating means relative to the examination table;
 - [13c] a magnetic-field generating member ("guided part 159," 23/18) arranged in at least one portion of the capsule endoscope, wherein the magnetic-field generating member includes at least one magnetic coil (23/17), the magnetic-field generating means is controlled such that a magnetic field is intermittently applied (34/66-35/16);
 - [13d] that the magnetic field may be intermittently applied as a pulse signal (see Figure 44 with reference to 25/1-6); and
 - [13e] the position of the capsule endoscope is detected by the magnetic field generating member ("By detecting the position of the guided part 159 with the hall sensor 131, the

position of the capsule type endoscope 150 is detected," 18/43-51); the invention of Ueda is capable of position sensing when the magnetic field is not applied.

[14] Ueda does not disclose:

[14a] moving means for moving the examination table relative to the magnetic-field generating means;

[15] Biglieri discloses the following in 5/23-30:

According to a further embodiment of FIG. 6, a magnetic structure may be provided which is displaced relative to the patient table, hence to the body under examination or the part thereof to a predetermined extent and in predetermined directions.

In this case, the magnetic structure 1 or the patient table 2, or both may be displaced relative to each other.

[16] Biglieri demonstrates the equivalence of the claimed invention with the invention disclosed by Ueda.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the examination table disclosed by Ueda could be moved relative to the magnetic- field generating means disclosed by Ueda, as opposed to the other way around. A skilled artisan may turn to this obvious and equivalent alternative if, for example, the magnets (due to their weight) are more difficult to move than the patient; or if the wires associated with an electromagnetic field-generating device are short or cumbersome.

[17] With regard to claim 18: As noted above, Ueda in view of Biglieri discloses a method of controlling a capsule endoscope, the method comprising:

[17a] generating an external magnetic field to control a movement of the capsule endoscope traveling in a body cavity of a subject lying down on art examination table (as noted above);

[17b] detecting a position of the capsule endoscope in the body cavity (as noted above); and

[17c] moving the examination table based on the detected position of the capsule endoscope
(as noted above).

Response to Arguments

[18] Applicant's arguments filed 5/23/08 have been fully considered but they are not persuasive.

[19] With regard to claim 1: Applicant contends that “[n]owhere in Biglieri (or Ueda) is it disclosed that the movement of the table is in response to the detecting or tracking of another item.” This is correct, although Ueda discloses movement of the magnetic-field generating means relative to the examination table in response to the position of the endoscope as determined by a Hall effect sensor array.

[20] Applicant further contends that “Biglieri merely moves the table as an alternative to moving the magnetic structure for the purpose of imaging the patient with the magnetic structure. Biglieri does not disclose or suggest that the table move in correspondence with the detection of a position of something else, such as the capsule endoscope”. It is true that Biglieri alone does not disclose that a table be moved in corresponds with the detection of a position of the endoscope. However, it is maintained that it would have been obvious at the time of the invention to move the table disclosed by Ueda relative to the magnetic-field generating means disclosed by Ueda as taught by Biglieri.

[21] With regard to claim 8: Applicant contends that:

When the magnetic field is not applied to the capsule endoscope, its position is detected by the action of the magnetic coils of the capsule endoscope itself. Here, it is to be noted that, if an external magnetic field is applied when the position of the capsule endoscope is being detected, the external magnetic field is overlaid to the action of the magnetic coils of the capsule endoscope itself for the position detection, which significantly decreases the precision of the position detection. To solve this problem, the capsule

endoscope system recited in claim 8 applies the capsule endoscope with an external magnetic field as a pulse signal, thereby highly precisely detecting the position of the capsule endoscope.

- [22] This process outlined in the arguments is highly detailed, but the claim itself simply recites that “magnetic-field generating means is controlled such that a magnetic field is intermittently applied as a pulse signal” and that “the position of the capsule endoscope is detected by the magnetic field generating member when the magnetic field is not applied”. Ueda’s magnetic-field generating means is at least inherently capable of being intermittently applied. Furthermore, the position of the capsule endoscope is detected at all times, including times when a magnetic field is not applied.

Conclusion

- [23] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip R Smith whose telephone number is (571) 272 6087 and whose email address is philip.smith@uspto.gov. The examiner can normally be reached between 9:00am and 5:00pm.
- [24] If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Linda Dvorak can be reached on (571) 272 4764.
- [25] Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Philip R Smith/

/Linda C Dvorak/

Examiner, Art Unit 3739

Supervisory Patent Examiner, Art Unit 3739